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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,753	07/28/2003	Kam-Leung Lee	Y0R920030077US1	4397
48150	7590	03/29/2005	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817				KEBEDE, BROOK
		ART UNIT		PAPER NUMBER
		2823		

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action Before the Filing of an Appeal Brief</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/627,753	LEE ET AL.
	Examiner Brook Kebede	Art Unit 2823

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 11 March 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1.  The reply was filed after a final rejection, but prior to filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- The period for reply expires 3 months from the mailing date of the final rejection.
- The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2.  The reply was filed after the date of filing a Notice of Appeal, but prior to the date of filing an appeal brief. The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3.  The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because

- They raise new issues that would require further consideration and/or search (see NOTE below);
- They raise the issue of new matter (see NOTE below);
- They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: *(See the attachment in Paragraphs 1-4)*. (See 37 CFR 1.116 and 41.33(a)).

4.  The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.

6.  Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7.  For purposes of appeal, the proposed amendment(s): a)  will not be entered, or b)  will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 23.

Claim(s) objected to: 36.

Claim(s) rejected: 1-22,24-26,28-35 and 37-40.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

#### AFFIDAVIT OR OTHER EVIDENCE

8.  The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9.  The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10.  The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11.  The request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.

12.  Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.

13.  Other: \_\_\_\_\_.

Continuation Sheet (PTO-303)

***Advisory Action***

1. On cursory consideration, the request for reconsideration, which has not been entered, does not clearly appear to overcome the rejections. Furthermore, the repose does not appear to place the application in better form for appeal by materially reducing or simplifying the issue for appeal. See 37 C.F.R. § 1.116(a)
2. Claim 23 would be allowable if submitted in a separate timely filed amendment by canceling the non-allowable claims.
3. Claim 36 also would be allowable, if written as independent form by incorporating all of the limitations of the base claim and any intervening claims and submitted in a separate filed amendment by canceling the non-allowable claims.

***Response to Arguments***

4. Applicants' arguments filed on March 11, 2005 have been fully considered but they are not persuasive.

Applicants argued that "no where the Talwar reference teach or suggest that the *at least one species retards a diffusion of dopant during the annealing of the substrate...*"

In response to applicant's argument, it is respectfully submitted Talwar et al. '044 disclose all the claimed limitation of the instant application claimed invention as set forth in Paragraph 4 of the Office action mailed on January 11, 2005.

Furthermore, the instant application claimed limitation, term "retards" has no special meaning and the term also is not defined in the specification. The term "retards" has given the

plain meaning. "The words of a claim must be given their *plain* meaning unless the are defined in the specification." See MPEP §§ 2111.01 [R-2].

According the Merriam-Webster online dictionary as shown below,

**Merriam-Webster Online Dictionary**

Thesaurus

3 entries found for **retard**.  
To select an entry, click on it.

**retard[1,verb]** **retard[2,noun]** **en retard** **Go**

**Main Entry:** **1retard**   
**Pronunciation:** **ri-'**tärd  
**Function:** **verb**  
**Etymology:** Middle English, from Middle French or Latin; Middle French *retarder*, from Latin *retardare*, from *re-* + *tardus* slow  
**transitive senses**  
**1** : to slow up especially by preventing or hindering advance or accomplishment : **IMPEDIE**  
**2** : to delay academic progress by failure to promote  
**intransitive senses** : to undergo **retardation**  
**synonym** see **DELAY**  
**- retard-er noun**

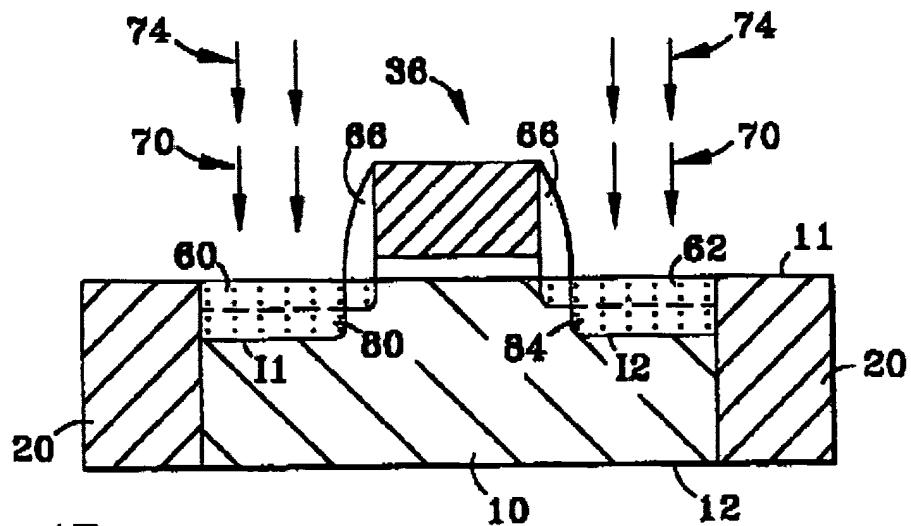
the claim limitation, i.e., "*at least one species retards a diffusion of dopant during the annealing of the substrate,*" can be interpreted as the following:

the heavy inert ions (atoms) dopant, i.e., such as Ge, Si, Xe..., (i.e., at least one species) limits the diffusion of diffusion of boron (B) or (As) that used to form the source drain (i.e., the dopant) during annealing of the substrate.

As well-known in the art as well as explicitly disclose by Talwar et al. '044 the purpose of doping substrate with heavy atoms prior forming of the source/drain junction is to limit

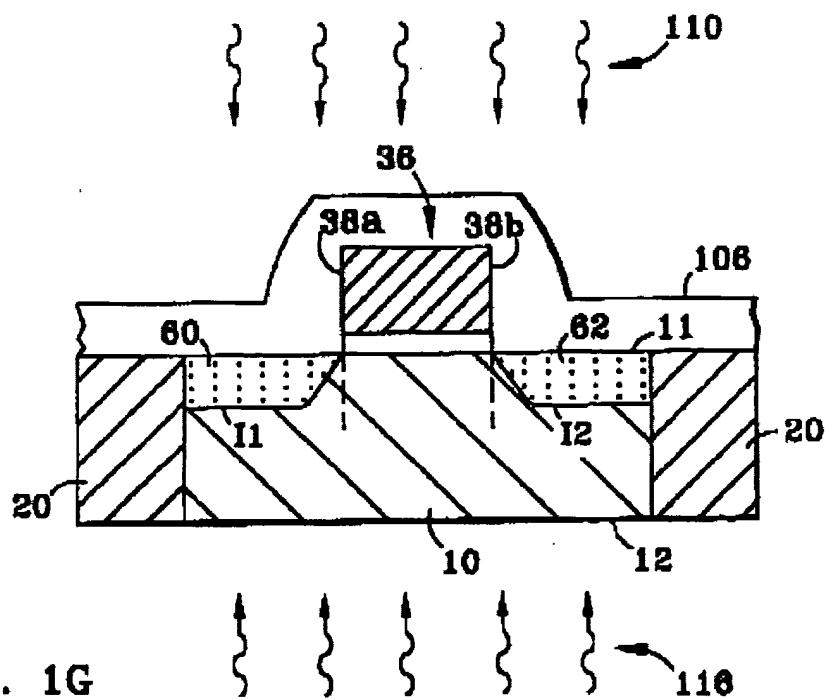
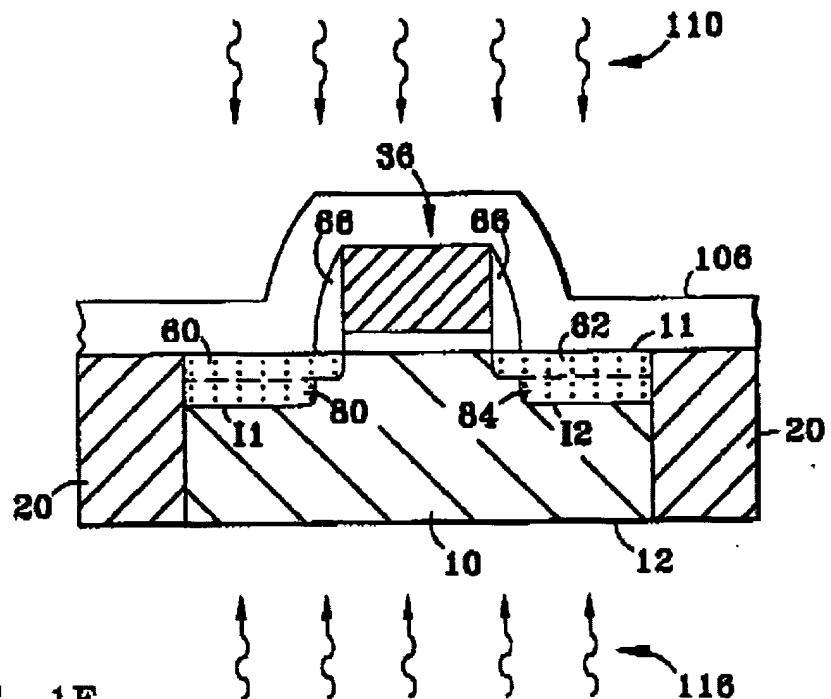
diffusion of the dopant into the semiconductor substrate especially in the channel region during the formation of the source/drain junction in order to form shallow source/drain junction regions which minimizes short channeling effect.

For practical reason, Figs. 1E – 1G of Talwar et al. '044 is respectfully presented herein below:



**FIG. 1E**

As depicted in Fig. 1E, the amorphous-crystalline interface region I1 and I2, which formed by heavy ions (i.e., at least one species), separates the amorphous region which the source/drain is formed and the crystalline region of the substrate (see Talwar et al. Col. 8, lines 34-50).



In the following process step, as shown above in Figs. 1F and 1G, after the source/drain ions implantation performed as depicted in Fig. 1E, the annealing process conducted in order to diffuse and activate the ions (i.e., dopant) that used to form the source/drain. Note that , as shown in Fig. 1G, the source drain dopant never penetrate the substrate beyond the region **I1** and **I2** because of the presence of the heavy atoms. Hence, diffusion of the source/drain dopant is stopped by the heavy ions from further progressing into the substrate during the annealing process. In other word, Talwar et al. '044 clearly discloses the *at least one species retards a diffusion of dopant during the annealing of the substrate...*"

Therefore, the rejection under 35 U.S.C. § 102(b) is still deemed proper. Furthermore, the *prima facie* case of obviousness has been met and the rejection under 35 U.S.C. § 103(a) is also deemed proper.

*Correspondence*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brook Kebede  
Examiner  
Art Unit 2823

BK  
March 22, 2005

*Brook Kebede*